

## **AGENDA**

### **State of Wisconsin Livestock Facility Siting Review Board**

**Thursday, February 18, 2010**

Dodger Bowl, 321 King Street, Dodgeville, Wisconsin

- 3 p.m. to 6 p.m. Livestock siting listening session—LFSRB members will be in attendance
- 6 p.m. to 7 p.m. Dinner break
- 7 p.m. to 9 p.m. Livestock siting listening session

**Friday, February 19, 2010**

LFSRB Meeting

Best Western Quiet House and Suites  
1130 North Johns Street, Dodgeville, Wisconsin

- 8:30 a.m. Call to Order—Jim Holte, LFSRB Chair
- Open meeting notice
  - Approval of agenda
  - Approval of September 18, 2009, LFSRB meeting minutes
  - Election of LFSRB Officers
- 8:40 a.m. Status of appeal on *Larson Acres, Inc. v. Town of Magnolia*, Docket No. 07-L-01, circuit court decision— Cheryl Daniels, Board Attorney
- 9:00 a.m. Livestock Siting rule, ATCP 51, evaluation review plan—Mike Murray and Richard Castelnuevo, DATCP
- 9:30 a.m. Results of the odor emission study, and hydrogen sulfide study at one Wisconsin farm—Steve Struss and Mike Murray, DATCP
- 10:15 a.m. Board schedule and future agenda items
- Scheduled 2010 meetings—March 19, April 16, May 21, June 18, July 16, August 20, September 17, October 15, November 19, and December 17
  - Future agenda items
- 10:30 a.m. Adjourn

**DRAFT MINUTES  
LIVESTOCK FACILITY SITING REVIEW BOARD  
SEPTEMBER 18, 2009, TELECONFERENCE MEETING**

**Boardroom 106  
Wisconsin Department of Agriculture, Trade and Consumer Protection  
2811 Agriculture Drive, Madison, WI**

Chair Holte called the meeting to order at 12 p.m. Other LFSRB members present by phone were Andy Johnson, Bob Selk, Fran Byerly, Lee Engelbrecht, and Jerry Gaska. Bob Topel was absent from the meeting. A quorum was present. DATCP staff present were Cheryl Daniels and Lori Price.

**Call to order: open meeting notice; approval of agenda; approval of August 21, 2009, meeting minutes**

Holte stated the meeting agenda was publicly noticed, as required, and then presented the agenda for approval. Johnson moved to approve agenda, and Engelbrecht seconded the motion. The motion passed.

Holte presented the August 21, 2009, meeting minutes for approval. Johnson made a motion to approve the minutes as written, and Selk seconded the motion. The motion passed.

**Status of appeal on Larson Acres, Inc. v. Town of Magnolia, Docket No. 07-L-01, circuit court decision**

Daniels reported that the Wisconsin Towns Association (WTA) is requesting the court to be an intervener in this case. Johnson asked for clarification on the role of an intervener and the implications of WTA as an intervener. Daniels responded that WTA is asking to submit a brief because of the implication of this case on political subdivisions, particularly the question of does the siting law limit what a political subdivision can decide. Daniels continued her report by stating four briefs have been filed in this case. The briefs are from the attorney for Larson Acres, attorney for the LFSRB, attorney for the Town, and the attorney for the plaintiffs. Other briefs were filed but were rejected by the Court because they were too long in number of pages submitted. The reply briefs are due in a couple of weeks. The documentation will then be circulated amongst the judges who will hear the case. The Court is usually good about staying on scheduled to hear a case.

**Review and approve LFSRB decision in Van Dyke v. Racine County, Docket No. 09-L-01**

The Board members and Daniels reviewed the draft decision and had minor grammatical changes; a change that clarified Noble Views was a LLC and not Inc.; and wording changes in the Issues for Decision, Conclusions of Law, and Opinion of the Board sections to clarify the Board's decision. Johnson then made a motion to approve the decision with the edits agreed upon by consensus. Byerly seconded the motion. A roll call vote was taken with 6 ayes, 0 nays,

and 1 Board member absent. The motion passed. Daniels will make the changes to the decision and send it to the Board members for signature.

**Board schedule and future agenda items**

Daniels stated that she is not aware of any potential cases that would come before the Board in the next couple of months. She also confirmed that she has not seen any information yet on senate confirmation of Selk's and Gaska's reappointment to the LFSRB.

**Adjourn**

Being no other business before the LFSRB, Byerly moved to adjourn the meeting, and Engelbrecht seconded the motion. The motion passed, and the meeting ended at 12:50 p.m.

Respectfully submitted,

---

Bob Selk, Secretary

Date

Recorder: LP



OFFICE OF THE CLERK  
**WISCONSIN COURT OF APPEALS**

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**DISTRICT IV**

**RECEIVED**

JAN 29 2010

**DEPARTMENT OF JUSTICE**

January 27, 2010

To:

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You are hereby notified that the Court has entered the following order:

2009AP608

John Adams, Linda Adams, Mike Johnson, Ann Johnson, Verne Wilkie, Rosemary Wilkie, Richard Massen and Darlene Massen v. State of Wisconsin Livestock Facilities Siting Review Board and Larson Acres, Inc.  
Town of Magnolia v. State of Wisconsin Livestock Facilities Siting Review Board and Larson Acres, Inc. (L.C. # 2007CV1478, 2007CV1479, 2007CV2104, 2008CV79)

Before Vergeront, Lundsten and Higginbotham, JJ.

Upon reviewing the briefs in this matter, the panel has determined that oral argument would be useful.

Larson Acres argues at page 21 of its opening brief that the siting law does not nullify all other applicable state laws or local ordinances, nor the authority of state or local government to enforce those laws or ordinances. It refers to WIS. ADMIN. CODE § ATCP 51, appendix A, application form § 15, which lists some but not necessarily all of the other potentially applicable state and local requirements. While the parties may address any points they feel are important, they should at a minimum be prepared to discuss if and how these other state and local requirements may be effectively enforced given the construction of the siting law advocated by the Appellant and Intervenor-Appellant. In particular, the court is interested in the practical difference, if any, between having these other requirements be conditions of the siting permit and enforcing them separately from the siting permit.

Co-appellants Larson Acres and the Livestock Facilities Siting Review Board shall have 30 minutes for their joint arguments, as will Respondents John Adams, Linda Adams, Mike Johnson, Ann Johnson, Verne Wilkie, Rosemary Wilkie, Richard Massen and Darlene Massen have 30 minutes to present their joint arguments. The court encourages the aligned parties to choose a single lawyer from each side to make their joint presentations, although we will not compel them to do so.

IT IS ORDERED that oral argument shall be held on Wednesday, February 17, 2010 at 9:30 a.m. in the courtroom located on the 2d Floor, East Wing of the State Capitol Building in Madison, Wisconsin.

IT IS FURTHER ORDERED that the parties shall advise this court a week in advance of the scheduled argument which attorney or attorneys will be arguing for each side.

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*David R. Schanker*  
*Clerk of Court of Appeals*

# Wisconsin Supreme Court and Court of Appeals Case Access

John Adams v. State of Wisconsin  
Appeal Number 2009AP000608

Court of Appeals District 4

## CASE HISTORY

Status	Court	Filing Date	Anticipated Due Date	Activity
PEND	CA		01-13-2010	Assigned-Oral Argument
PEND	CA			Awaiting Assignment
PEND	CA		02-17-2010	Oral Argument
OCCD	CA	01-27-2010		Court Order ORD that oral argument shall be held on Wednesday, February 17, 2010 at 9:30 a.m. in the courtroom located on the 2d floor, East Wing of the State Capitol Building in Madison, Wisconsin. FRO that the parties shall advise this court a week in advance of the scheduled argument which attorney or attorneys will be arguing for each side.
OCCD	CA	10-26-2009		Briefs Received At State Law Library
OCCD	CA	10-16-2009		Record and Briefs Sent to District 4
OCCD	CA	10-14-2009		Brief of Amicus Curiae <u>Brief of Amicus Curiae - Dane County, Town of Dunn, Family Farm Defenders, George Meyer and Melissa Malott</u>  Filed By: Carlos Pabellon
OCCD	CA	10-13-2009		Brief of Amicus Curiae <u>Brief of Amicus Curiae - Agriculture Coalition</u>  Filed By: H. Peterson
OCCD	CA	10-13-2009		Brief of Amicus Curiae <u>Brief of Amicus Curiae - Wisconsin Association of Lakes</u>  Filed By: (O'Connor, William)
OCCD	CA	10-13-2009		Brief of Amicus Curiae <u>Brief of Amicus Curiae - Wisconsin Towns Association</u>  Filed By: Richard Stadelman

WSCCA Case History

OCCD CA 09-24-2009

Reply Brief

Reply Brief of Larson Acres, Inc. response to Brief of Town of Magnolia

Filed By: Eric McLeod

OCCD CA 09-24-2009

Rejected Electronic Document

OCCD CA 09-21-2009

Reply Brief

Reply Brief of State of Wisconsin Livestock Facilities Siting Review Board

Reply Brief of Intervenor-Appellant Larson Acres, Inc.

Filed By: Eric McLeod

OCCD CA 09-21-2009

Reply Brief

Filed By: Robert Hunter

OCCD CA 09-18-2009

Motion to File Amicus/Non-Party Brief

Filed By: H. Peterson

Submit Date: 9-21-2009

Decision: (G) Grant

Decision Date: 9-29-2009

ORD that we grant permission for Dane County, the Town of Dunn, Family Farm Defenders, Melissa Malott, and George Meyer to file a joint non-party brief and for the Wisconsin Farm Bureau Federation, the Dairy Business Association, the Wisconsin Cheese-Maker's Association and the Wisconsin Pork Association to file their own joint non-party brief. The non-party briefs shall be due October 13, 2009, or 20 days after the reply brief is filed, whichever is later.

OCCD CA 09-17-2009

Motion to File Amicus/Non-Party Brief

Filed By: Carlos Pabellon

Submit Date: 9-21-2009

Decision: (G) Grant

Decision Date: 9-29-2009

ORD that we grant permission for Dane County, the Town of Dunn, Family Farm Defenders, Melissa Malott, and George Meyer to file a joint non-party brief and for the Wisconsin Farm Bureau Federation, the Dairy Business Association, the Wisconsin Cheese-Maker's Association and the Wisconsin Pork Association to file their own joint non-party brief. The non-party briefs shall be due October 13, 2009, or 20 days after the reply brief is filed, whichever is later.

OCCD CA 09-14-2009

Motion to File Amicus/Non-Party Brief

Filed By: (O'Connor, William)

Submit Date: 9-15-2009

Decision: (G) Grant

Decision Date: 9-17-2009

ORD that the Wisconsin Towns Association and The Wisconsin Association of Lake may each file a nonparty brief in this matter pursuant to Wis. Stat. Rule 809.19(7). The briefs shall be due October 13, 2009, or 20 days after the Appellant's reply brief is filed, whichever is later.

OCCD CA 09-09-2009

Motion to File Amicus/Non-Party Brief

Filed By: Richard Stadelman

Submit Date: 9-10-2009

Decision: (G) Grant

Decision Date: 9-17-2009

ORD that the Wisconsin Towns Association and The Wisconsin Association of Lake may each file a nonparty brief in this matter pursuant to Wis. Stat. Rule 809.19(7). The briefs shall be due October 13, 2009, or 20 days after the Appellant's reply brief is filed, whichever is later.



WSCCA Case History

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OCCD CA 09-08-2009 Rejected Electronic Document

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OCCD CA 09-08-2009 Brief of Respondent(s)  
Brief of Respondent(s) - Town of Magnolia  
 Filed By: Glenn Reynolds

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OCCD CA 09-04-2009 Brief of Respondent(s)  
Brief of Respondent(s) - John Adams, et al.  
 Filed By: Christa Westerberg

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OCCD CA 08-19-2009 MXT Pages In Brief  
 Filed By: Elizabeth Mackey  
 Submit Date: 8-20-2009  
 Decision: (D) Deny  
 Decision Date: 8-27-2009  
 ORD that the motions to file oversize briefs are denied for the reasons stated in this order.

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OCCD CA 08-19-2009 Attorney Change

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OCCD CA 08-18-2009 MXT Pages In Brief  
 Filed By: Christa Westerberg  
 Submit Date: 8-19-2009  
 Decision: (D) Deny  
 Decision Date: 8-27-2009  
 ORD that the motions to file oversized briefs are denied for the reasons stated in this order.

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OCCD CA 07-21-2009 Motion to Extend Time  
 Filed By: Christa Westerberg  
 Submit Date: 7-21-2009  
 Decision: (N) No Action  
 Decision Date: 7-21-2009  
 no action.  
 See BRS event due on 8-24-2009

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OCCD CA 07-17-2009 Motion to Extend Time  
 Filed By: Glenn Reynolds  
 Submit Date: 7-20-2009  
 Decision: (G) Grant  
 Decision Date: 7-21-2009  
 ORD that the time for respondents to file their briefs is extended to August 24, 2009.  
 See BRS event due on 8-24-2009

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OCCD CA 07-07-2009 Brief & Appx of Appellant(s)  
Brief of Intervenor-Appellant  
 Filed By: Eric McLeod

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OCCD CA 07-07-2009 Rejected Electronic Document

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# WSCCA Case History

OCCD CA 07-07-2009

Brief & Appx of Appellant(s)  
Brief of Respondent-Co-Appellant

Filed By: Robert Hunter

OCCD CA 06-01-2009

Attorney address updated

OCCD CA 05-28-2009

Record

OCCD CA 05-14-2009

Attorney address updated

OCCD CA 05-08-2009

Court Reporter's Statement-Trans.

Court Reporter Name: (Blum, Linda)

OCCD CA 05-08-2009

Statement on Transcript

Filed By: Eric McLeod  
Status: Ordered

OCCD CA 05-07-2009

Transcript filed in Circuit Court

OCCD CA 04-08-2009

Notif. Sent - Filing of NOP & Ct. Rec.

OCCD CA 04-08-2009

Fee Waived

OCCD CA 04-08-2009

Notice of Addtl/Amended (Other) Appeal

OCCD CA 04-06-2009

Other Appeal Filed In Circuit Court

OCCD CA 04-03-2009

Statement on Transcript

Filed By: Robert Hunter  
Status: Not Needed

OCCD CA 04-03-2009

Docketing Statement from Appellant

OCCD CA 03-24-2009

Designation of Addtl Portions-Trans.

OCCD CA 03-17-2009

Case to proceed under RAP

OCCD CA 03-11-2009

Docketing Statement Submitted

OCCD CA 03-11-2009

Fee Paid

OCCD CA 03-11-2009

Statement on Transcript

Filed By: Eric McLeod  
Status: Not Needed

WSCCA Case History

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OCCD CA	03-03-2009	Notif. Sent-Filing of NAP & Ct. Record
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OCCD CA	03-03-2009	Notice of Appeal & Court Record
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OCCD CA	02-26-2009	Notice of Appeal filed in Cir. Ct.
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OCCD CA	02-25-2009	Docketing Statement from Appellant
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OCCD CA	02-17-2009	Order of Circuit Court
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State of Wisconsin  
Jim Doyle, Governor

**Department of Agriculture, Trade and Consumer Protection**  
Rod Nilsestuen, Secretary

**DATE:** January 4, 2010

**TO:** Board of Agriculture, Trade and Consumer Protection

**FROM:** Rod Nilsestuen, Secretary  
Kathy F. Pielsticker, Administrator  
Division of Agricultural Resource Management

**SUBJECT:** Four Year Review of Livestock Facility Siting Rule-Plan for Public Input

**PRESENTED BY:** Michael Murray and Richard Castelnuovo

**RECOMMENDATION:**

The department requests Board approval of a plan to gather public input as part of a four year review of the livestock facility siting rule, ch. ATCP 51, Wis. Admin. Code, required by s. 93.90, Stats.

**SUMMARY / BACKGROUND:**

DATCP believes that a review of ATCP 51 should consider the diverse viewpoints about how the rule is working, including its impact on local governments capacity to regulate livestock operations, and farmers' ability to expand their livestock operations.

DATCP is proposing the following plan to secure and present public input:

- Distribute a guidance document to help the public understand the review process and provide relevant comments (see attachment)
- Host four listening sessions between 3:30 to 7:00 pm on the following dates:
  - February 23 Eau Claire, Town of Washington Town Hall
  - February 25 Madison, DATCP Office Building, Board Room - February 18
  - March 2 Oshkosh, Coughlin Center, Rooms A&B
  - March 3 Wausau, UWEX
- At the May 2009 meeting of the ATCP Board meeting:
  - Present public comments and DATCP's evaluation report that reflects public input.
  - Identify "next steps" in the rule review process which may include a scope statement and selection of an expert committee.

**ATTACHMENT:** Seeking Public Comment for the Four Year Evaluation of the Livestock Facility Siting Rule Ch. ATCP 51 Wis. Admin. Code

*Agriculture generates \$51.5 billion for Wisconsin*

## **Seeking Public Comment for the Four Year Evaluation of the Livestock Facility Siting Rule Ch. ATPC 51 Wis. Admin. Code**

### **Why seek public comment on the livestock facility siting rule?**

Public comments are being sought to fully recognize the diverse viewpoints about the siting rule. The Department of Agriculture, Trade and Consumer Protection (DATCP) intends to seek comments from interested citizens, organizations and government officials impacted by the Livestock Facility Siting Rule (ch. ATPC 51 Wis. Admin. Code).

Under the Livestock Facility Siting Law (s. 93.90 Wis. Stats.), DATCP was charged with developing ATPC 51, and evaluating its implementation. Comments will be considered as part of the four year review of the siting rule being conducted by the department to meet the requirement of s. 93.90 (2) (c), Stats. Four listening sessions will be scheduled in February and March to provide a forum for the department to gather public input. Written comments will also be accepted. Gathering feedback in this manner is expected to generate information useful for the department's evaluation of the rule, and other potential department actions.

### **What is the background of the livestock facility siting law and rule?**

When adopted in 2004, section 93.90, Stats., established a statewide framework for local regulation of livestock facilities, including limitations on the exclusion of livestock facilities in agricultural zones and requirements for issuing conditional use or other permits for siting livestock facilities. It also created the Livestock Facility Siting Review Board (LFSRB) to hear appeals concerning local permit decisions. The siting legislation reflected an attempt to balance local control, community oversight, environmental protection and the need for a predictable process. The statute required that the department balance these same factors in developing standards and other rules to implement the law. The new rule ATPC 51 became effective on May 1, 2006.

Under the siting law and rule, local jurisdictions are not required to adopt regulation for siting livestock facilities; however, if local government elects to require permits then the requirements of the siting law for approving new or expanding livestock facilities must be followed. Local ordinances can require a zoning or licensing permit. Licensing was a new option offered to local government. Most local ordinances require permits for facilities that exceed 500 animal units of cattle, swine, poultry, sheep or goats.

Farmers must use the application worksheets in the rule to demonstrate that their facility meets state standards for: property line and road setbacks, odor management, waste and nutrient management, manure storage facilities and runoff management. Local governments must follow specific timelines and requirements for making permit decisions.

Through November, 2009, 62 ordinances have been adopted: 23 by counties, 38 by towns and one by a city. During this time period 47 siting permits have been issued, mainly

without controversy: 39 by counties and 8 by towns. The LFSRB heard six appeals: three local decisions to approve livestock siting applications were upheld, one local approval was reversed and the LFSRB did not have jurisdiction to hear two appeals. If you are interested in more information, copies of the past three annual reports on implementation of the livestock siting rule are available at [livestocksiting.wi.gov](http://livestocksiting.wi.gov).

#### **What will DATCP do with public comments?**

DATCP will consider comments during an analysis of implementation issues relevant to the creation of the four year evaluation report. A separate summary of comments may be developed. At the May 2010 Board of Agriculture, Trade and Consumer Protection (ATCP Board) meeting, staff will present the rule evaluation report and also summarize public comments. This evaluation is the first step in any process to change the rule. The report's findings and outcome of Board meeting will set the stage for future actions.

#### **How will comments be considered by DATCP in its evaluation of the rule?**

Comments specific to ATCP 51 will be given the highest priority for inclusion in the four year evaluation report. While the department will accept comments on any aspect of the siting law, it is important to understand that the department may give these less weight to comments that are not directly related to its rule review.

The following guidance will be provided to the public to help obtain comments valuable in completing the review of the rule:

1. By law, the four year review must focus on the standards in ATCP 51 (see s. 93.90 (2) (c), Stats. and subchapter II of ATCP 51). It is important to recognize that certain requirements are imposed by statute, while others are imposed by DATCP rule. DATCP rule making cannot change statutory requirements.
2. The siting law establishes criteria the department must consider when promulgating the rule. The following considerations in section 93.90(2)(b) have equal weight, and should be balanced against each other in the rule evaluation:
  - (1) protective of public health or safety; (1m) practical and workable; (2) cost-effective; (3) objective; (4) based on available scientific information that has been subjected to peer review; (5) designed to promote the growth and viability of animal agriculture in this state; (6) designed to balance the economic viability of farm operations with protecting natural resource and other community interests; and (7) usable by officials of political subdivisions.
3. Local governments have four years of experience implementing the rule. During this time DATCP summarized implementation issues in three annual reports. In preparation for the listening sessions, the department identified key implementation issues and prepared the list in Appendix A.
4. Recognizing that the siting law only covers a limited number of issues related to livestock facilities, Appendix B and the attached fact sheet will be available to identify other laws that regulate activities on livestock operation outside the scope of the siting law.

## Appendix A

### Summary of ATCP 51 Implementation Issues

1. The siting law limits local authority to make permit decisions involving new and expanded livestock operations outside the scope of the siting standards.
2. The siting law limits the requirements and conditions a local government can impose on a permit for a new or expanding livestock operation.
3. Legal requirements for adopting more stringent local siting standards.
4. Authority to monitor and enforce permit requirements.
5. Uniform implementation of the siting standards and rule.
6. The process to determine the completeness of an application.
7. Maximum \$1000 application fee.
8. Setback distances for livestock structures.
9. Linking concerns about toxic air emission to the odor standard.
10. Odor control practice credits.
11. New facilities under 500 animal units, expansions under 1000 animal units and facilities that do not have neighboring residences within 2500 feet are exempt from the odor standard.
12. A nutrient management plan (NMP) is not required with an application.
13. Facilities under 500 AU do not have to file the nutrient management checklist or a NMP with a permit application.
14. Documenting components of a nutrient management plan.
15. More stringent manure spreading criteria above those in the NRCS 590 standard must be established according to the more stringent standard requirements under s. 93.90 Wis. Stats, and the state runoff rules s. 92.15 Wis. Stats.
16. While most livestock facilities subject to the siting law have manure storage (including all that must have a CAFO permit), the siting law does not require storage, nor does it mandate the length of storage.
17. Animal lot runoff must be evaluated with the BARNY model.
18. The rule does not reference a NRCS technical standard for feed storage leachate runoff control.
19. NRCS technical standards referenced in the rule have been, or are being revised.
20. The application does not require a narrative describing the facility, how components of the farm systems work, or adjacent land use.
21. Some consultants and regulators waver when asked to sign off on certain application worksheets.

22. Area maps must have topographic lines at 10 foot elevation intervals.
23. Coordination of multiple water quality standards enforced through different state and local permit requirements.
24. Regulators are uncertain about the pre-expansion size of many facilities.
25. The siting law uses the definition of "animal units" used in s. NR 243.03 (3) as it existed on April 27, 2004 (the date on which the livestock facility siting law, 2003 Wis. Act 235, was published).
26. Public notification of a permit application.
27. Local variations for modifying a siting permit.



## Appendix B

### Issues outside the scope of ATCP 51

While the following laws may apply to the operation of a livestock facility, local approval of a livestock facility under the siting law is NOT based on these laws.

- Soil conservation and nonpoint pollution laws (contact your county land conservation department).
- Livestock facilities that have 1,000 or more animal units, or that discharge pollutants directly to waters of the state, must also obtain a WPDES permit from DNR.
- Pesticide and agricultural chemical laws administered by DATCP.
- Animal disease control laws administered by DATCP.
- Animal mortality laws administered by DATCP.
- Vehicle weight limits and state prohibitions against spilling waste on roads.
- Food safety and animal health licenses administered by DATCP. All livestock operations must register, and some (such as dairy farms) must hold a state license.
- Air pollution control regulations such as NR 445 administered by DNR.
- Building, electrical, plumbing and sanitation codes administered by the Wisconsin Department of Commerce. A local authority may disapprove a proposed livestock facility that violates a conforming local code.
- Construction site erosion control laws administered by DNR.
- Local erosion control and stormwater management ordinances.
- Petroleum storage laws administered by the Wisconsin Department of Commerce.
- High capacity well regulations administered by DNR.

# Understanding Local and State Regulations for New and Expanding Livestock Facilities

This overview outlines key local and state regulations beyond the permits issued by local governments under the Livestock Facility Siting Law (Siting Law), ATCP 51 Wis. Admin. Code, and Department of Natural Resources (DNR) permits for concentrated animal feeding operations (CAFO) under NR 243 Wis. Admin. Code. Local and state officials can provide more detailed regulatory information, including copies of applicable plans and ordinances.

## Local planning

Comprehensive land use plans define future land uses, including delineation of areas slated for development and transition out of agriculture. County farmland preservation plans define areas for agricultural preservation. Zoning and other land use regulation must be consistent with these plans.

## Local zoning

Towns and counties have the authority to regulate rural land use through zoning. In addition, cities and villages can exercise extraterritorial zoning in areas surrounding their incorporated boundaries. Locally-established zoning districts specify what uses are allowed. Livestock facilities can be prohibited; or allowed as a permitted or a conditional use. Conditional use permits (CUPs) must be issued in accordance with the Siting Law, and cannot be used to exclude a proposed facility. To prohibit or limit the size of livestock farms within agriculturally zoned districts, the Siting Law requires that a local ordinance include reasonable public health and safety justifications backed by scientifically defensible findings of fact. Also, at least one other agriculturally-zoned district must allow for livestock operations of any size. Zoning designations can change. For example if a dairy is located on land that is re-zoned to a non-agricultural use, it becomes a non-conforming use and restrictions on the ability to modernize or expand the farm can be imposed.



## Development restrictions near lakes, rivers, wetlands and floodplains

Locally enforced shoreland-wetland zoning ordinances and floodplain ordinance implement minimum state standards for development in these areas. Farmers cannot construct stream crossings or other structures within navigable waterways without a DNR Chapter 30 Permit. DNR approval is needed for filling and grading wetlands, and an Army Corps of Engineers wetlands permit may also be necessary.

## Setback restrictions

Farm structures must meet minimum setback distances specified in local ordinances. Local ordinances establish property lines and road setbacks for structures, subject to limits imposed by the Siting Law. A variance to the setback requirement may be granted by a local board of adjustments or similar body. Referenced in local ordinances, Natural Resources Conservation Services (NRCS) technical standards require that practices be constructed and operated according to standards, including setback distances. For example, manure storage structures must be located 400 feet from a sinkhole, and manure cannot be applied within 50 feet of a well.

## Air quality regulation

Certain facilities covered by the Siting Law must comply with an odor standard that uses a predictive model to determine acceptable odor levels from the farm structures. The Siting Law does not provide authority to monitor and regulate emissions. In the future, livestock farms may be required to meet air emission standards for hydrogen sulfide and ammonia under the DNR air toxics rule NR 445, Wis. Admin. Code.

## Road access and vehicle weight limits

The Department of Transportation and local governments can restrict highway access points and impose road weight limits to prevent damage, including seasonal weight restrictions. Local requirements are determined by the authority responsible for maintaining the road.



# Water-Related Regulations

## State runoff management rules

State runoff rules require all livestock operations to properly store manure, divert clean water from animal lots, prevent overgrazing of streambanks, and apply manure and other fertilizers to croplands according to a nutrient management plan. Most farms must be offered cost-share funding to be required to meet state standards.



County land and water conservation departments (LCDs) are primarily responsible for implementing the runoff rules. Generally local regulations must implement state runoff standards, with limited options to address additional resource concerns. Under s. 92.15 Wis. Stats, counties and towns can impose more stringent local standards for livestock operations if the local standards are supported by water quality justifications, and have been approved by DNR and DATCP. For more information go to <http://runoffinfo.uwex.edu/>

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## Local manure management permits

County ordinances require a permit for new or modified manure storage structures, ensuring design and construction according to NRCS technical standards. A nutrient management plan must be developed to ensure that stored manure is properly land applied. County LCDs help farmers identify special design considerations for sensitive sites, as well as explain other local requirements such as winter manure spreading plans. For LCD contact information go to: <http://www.datcp.state.wi.us/arm/agriculture/land-water/conservation/lcdir.jsp>

Towns and counties can adopt an ordinance under the Siting Law that requires a permit for new or expanding livestock facilities with 500 or more animal units (a few local ordinances can require a permit for smaller facilities). Siting permits are issued under a licensing ordinance or as a conditional use permit under a zoning ordinance. Through a siting permit a local government can enforce state water quality standards for manure storage, runoff and nutrient management, and also an odor management standard (see prior page). A siting ordinance can include a more stringent local standard if it is based on defensible findings of fact justifying that the local requirement is necessary to protect public health and safety. To determine where siting permits are required, contact local zoning departments and LCDs. For information go to <http://livestocksiting.wi.gov>

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## State permits for large livestock operations

Livestock farms with 1,000 or more animal units, about 700 milking cows, must obtain a Wisconsin Pollution Discharge Elimination System (WPDES) permit from the DNR. Permit requirements exceed the manure management standards in the state runoff rules. State permits do not restrict the number of animals at a facility; however, permits can impose additional requirements to adequately protect water quality. For information, go to <http://dnr.wi.gov>



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## Stormwater and erosion control

Prior to construction activities disturbing one acre or more, landowners must obtain a DNR storm water construction site general permit, which includes post-construction stormwater management requirements. Local stormwater and erosion control approvals may also be necessary.

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## High capacity well permit

DNR approval is required when the combined pumping capacity of all private wells on a farm exceed 70 gallons per minute. Capacity certification may be required if a farm well serves 25 or more people daily.



# **EXECUTIVE SUMMARY**

**OF**

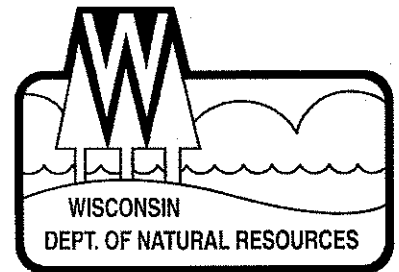
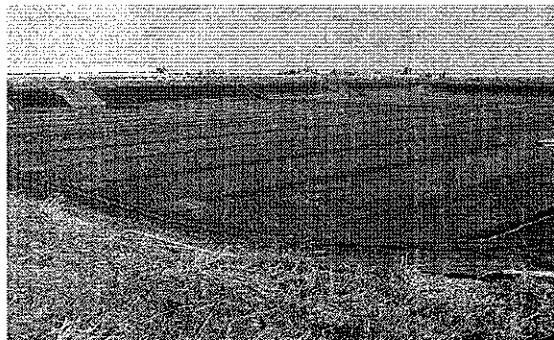
## **WISCONSIN'S DAIRY AND LIVESTOCK**

### **ODOR AND AIR EMISSION PROJECT**

**SUPPORTED BY USDA NRCS**

**CONSERVATION INNOVATION GRANT**

**NRCS 68-3A75-5-157 WI DAIRY AND LIVESTOCK AIR EMISSION/ODOR PROJECT**



September 2009

Madison, Wisconsin

## **EXECUTIVE SUMMARY**

### **BACKGROUND**

Supported by a U.S. Department of Agriculture Conservation Innovation Grant, this project investigated the air impacts of different manure management practices on typical large animal feeding operations. Over the course of two years, staff from the Wisconsin Department of Agriculture, Trade and Consumer Protection and the Wisconsin Department of Natural Resources measured odors and airborne concentrations of ammonia and hydrogen sulfide, both on and around manure storage lagoons on farms employing these different practices. It should be noted that our sampling was not intended to measure emissions or determine emission factors.

The subject farms for this project were selected through a statewide request for study participation. Interested farms were reviewed by a steering committee consisting of a number of representatives of agriculture, state agency, and environmental groups. Participants in the study were given the incentive of cost sharing for practices they installed on their farms, or a participation stipend in the event that no practices were installed. The steering committee selected six study farms (five dairies and one heifer raising facility), and four control practices to evaluate.

The four practices tested were anaerobic digesters; an impermeable cover; a permeable cover; and a solids separation and aeration system. Two types of digesters were studied, a mesophilic (low temperature) digester and a thermophilic (high temperature) digester. The impermeable cover was a gas-tight HDPE material that is characteristic of those used to line earthen storage lagoons. The permeable cover was a floating geotextile membrane, which acted like an artificial crust to break up the air/liquid interface, yet allowed precipitation and gasses to pass through. The solids separation and aeration was a proprietary system that consisted of two screen roller press filters followed by two waste storage lagoons equipped with floating aerators. The aerators were installed such that they forced air into the upper layer of the stored manure. The theory behind this is to allow the deeper wastes to breakdown anaerobically, but to control the gases being generated by passing them through a top aerobic layer.

A total of 28 sampling trips were conducted on 6 different farms, three of which installed potential control practices during the course of the project, allowing pre- and post-installation sampling. Two of the farms had anaerobic digesters already installed, allowing us to make comparisons to a similar farm without a digester. And the sixth farm was an open feedlot, which provided us with baseline data only. During these trips, a total of over 2,000 air samples for ammonia and hydrogen sulfide were collected, mostly from the perimeters of the manure storage lagoons. Samples were also collected from the lagoon surface. During these trips, 103 odor transects were conducted using a field olfactometer. This report documents the air and odor sampling procedures and compiles the results.

The project focus on lagoons required skilled knowledge of other potential sources of odors on farms, such as barns and sand channels. Where appropriate, these areas were also sampled to facilitate a better understanding of the impact these areas might have on measurement and analysis of data.

## **KEY FINDINGS**

### **Ambient NH<sub>3</sub> and H<sub>2</sub>S Concentrations**

Concentrations of ammonia and hydrogen sulfide tended to vary as much or more widely between visits to the same farm as they did between two different farms. This variability, compounded by the relatively few trips made to each individual farm, yielded a situation where we were not able to collect a statistically significant quantity of samples, and our results therefore contain some ambiguity. Samples were collected at the edge of each practice being studied to minimize the interference from other on-farm sources, and to factor out the effect of atmospheric dispersion. For this reason, all results are reported as "near", however it is logical that concentrations away from these practices would follow the same trends as those nearby.

The following statements appear to be supported by our data:

- 1) In general, higher ambient concentrations of hydrogen sulfide will be observed around agitated manure storage and treatment system surfaces (either during pumping, or along sand channels, and near outfalls and spillways).
- 2) Installing an impermeable cover will significantly reduce near lagoon ambient concentrations of ammonia and hydrogen sulfide.

The statements below are less conclusively supported, although they are likely to be true:

- 3) Installation of a semi-permeable cover is likely to reduce near lagoon ambient concentrations of ammonia and hydrogen sulfide; however, later exposing the covered wastes to air (as is done in a sand separation channel) may lead to significant increases near the uncovered areas, when compared to pre-covered levels.
- 4) Lagoon aeration may reduce manure surface concentrations of hydrogen sulfide. However, in our test case, surface ammonia concentrations, as well as general nearby ambient concentrations of both compounds increased following aeration.

The following points of interest may have important manure management implications:

- 5) Digested manure appears to generate lower hydrogen sulfide concentrations near the lagoons than undigested manure, although further study would be necessary to state this conclusively. There appears to be no similar reduction in ammonia concentrations.
- 6) Hydrogen sulfide concentrations around undigested manure surfaces appear to increase at night relative to daytime concentrations. Whether this is due to overnight inversions allowing the compound to concentrate, or is due to some intrinsic property of the dynamics of exchange across the air/manure interface is unknown.
- 7) Ammonia concentrations, in contrast, appear to peak during the daylight hours, around both digested and undigested manures.
- 8) Most near lagoon concentrations of hydrogen sulfide are below air toxics limits for property lines. However, our data shows the presence of highly concentrated and compact plumes near areas of agitation which could potentially travel significant distances before fully dispersing.

## **Odor Sampling**

Downwind odor measurements were taken at 200-foot intervals both before and after the control practices were installed. The general trend in these odor measurements was used to determine the estimated overall odor control performance of each practice. The study focused on odors emitted from manure storage lagoons, since these are typically the single most significant source of odors from concentrated animal feeding operations. Odor levels were measured using a Nasal Ranger<sup>TM</sup> field olfactometer, produced by St. Croix Sensory of Lake Elmo, Minnesota.

Although a limited number of odor transects were conducted, and conditions varied throughout the study, general trends were observed for each of the control practices tested. The results of that testing are summarized below, and described in greater detail throughout the report. Caution should be exercised when extrapolating these results to other farming operations.

## **Anaerobic Digesters**

The storage lagoon receiving wastes from the low temperature digester produced about 15% less ambient odors than a similar lagoon storing undigested wastes. On the other hand, the storage lagoon receiving wastes from the high temperature digester produced about 15% more ambient odors than did the lagoon storing undigested wastes. Because of the inherently subjective nature of this type of testing, plus or minus 15% should not be considered statistically significant. Factors such as retention time, operational reliability, and addition of substrate material can all influence the performance of an anaerobic digester, and therefore its effectiveness at controlling odors.

## **Impermeable Cover**

Installing an impermeable cover on the manure storage lagoon effectively controlled all ambient odors that had been emitted prior to the installation of the cover (100% reduction). This result can logically be applied to other lagoons, assuming that the covers remain air-tight and that the gasses that form under the cover are collected and burned in a flare or generator set, as was the case with our demonstration farm.

## **Permeable Cover**

Installing a permeable cover on the manure storage lagoon resulted in about an 80% reduction in ambient odors from that source in the first year, and about a 60% reduction in the second year.

## **Solids Separation and Aeration**

Installing this proprietary system resulted in about a 20% reduction in odors in the first year and about a 25% reduction in the second year

## **CONCLUSIONS**

It can be concluded that covers are effective at controlling odors and ambient air concentrations of  $\text{NH}_3$  and  $\text{H}_2\text{S}$  from manure storage lagoons. Of these, impermeable

covers are very effective (100% reduction), and permeable covers are quite effective (about 70% reduction).

Solids separation and aeration appear to reduce odors somewhat (about 25%) as well as H<sub>2</sub>S concentrations, however NH<sub>3</sub> concentrations could be increased.

Anaerobic digesters do not predictably reduce odors or ambient NH<sub>3</sub> concentrations near manure storage lagoons, however they may reduce H<sub>2</sub>S concentrations. Advances in H<sub>2</sub>S control have been made in Europe that reduce concentrations even further, and these are now being adopted by some U.S. firms.

The odor model used by Livestock Facility Siting rule (ATCP 51) accurately predicts the odors from averaged sized manure storage lagoons (around 4 acres), however it under predicts odors from small lagoons (0.4 acre). The credit given in the odor model for covers, both impermeable and permeable, seems appropriate. Too great a credit may be provided for anaerobic digesters, as well as solids separation and aeration systems. And finally, the odor model may not be applicable for large, lightly stocked earthen feedlots.

This study yielded important insights into controlling odors from manure storage lagoons, and these are detailed in the Lessons Learned and Improving Farm Practices sections of this report. However, it also leaves many questions unanswered, and has raised new questions we did not anticipate beforehand. It will facilitate future investigations by highlighting the challenges in such evaluations, including the dynamic nature of farms. The information gathered by this study should aid in making future decisions regarding the control practices studied, as well as helping to guide future studies into the air impacts of CAFOs.

## **IMPLICATIONS AND RECOMMENDATIONS**

### **Improving Farm Practices**

Throughout the course of this study, 28 visits were made to the six study farms over a two year period. This allowed for observations to be made regarding the overall management of the farms, and how that management affected odors and concentrations of ammonia and hydrogen sulfide. Based on those observations, the following suggestions are offered to farmers wishing to reduce odors from their farms:

1. Minimize surface agitation of waste storage lagoons and exposure to the air. This includes using submerged inlets, subsurface versus above surface jets for mixing, and incorporating wastes when land applying. These practices will also minimize the volatilization of ammonia, thus maximizing the amount of nitrogen supplied to your crop. This change alone eliminated neighbor complaints at the low temperature digester farm.
2. If installing a manure digester, maximize the retention time. More thorough digestion of the wastes will reduce odors from the lagoon, and incomplete digestion can actually increase odors. Also install a high quality flare with a reliable igniter and a large wind baffle. This will avoid the unintentional release of unburned digester gas to the air.



3. If installing a new waste storage lagoon, consider incorporating an impermeable cover. A cover greatly reduces odors and other impacts on neighbors. Also, the reduction in greenhouse gasses could qualify you for cost-sharing through a carbon credit program. The savings in not having to haul precipitation can be significant. And lastly, it is far more economical to add a cover to a new storage lagoon than it is to retrofit one on later.
4. Consider installing a permeable cover on your existing waste storage lagoon. Although not as effective at controlling odors and greenhouse gasses as an impermeable cover, it will provide significant benefits at far less cost. If doing so, be certain to provide a number of well spaced openings for agitation and pumping.
5. Keep stored feed clean and dry. This will reduce odors as well as protect feed quality.
6. Consider the installation of a solids separator to produce your own bedding. Composted manure solids can provide a safe supply of bedding, when moisture levels are properly managed. The cost savings over other types of bedding material, such as sand, can be substantial.
7. Keep animal densities low on open feedlots. High stocking rates can increase odors, as well as runoff and erosion. Ideally, consider going to a rotational grazing set-up. This will bring things into balance with your land base, reducing inputs and impacts on the environment.
8. Separation distance is a simple, yet effective, tool you can use to reduce impacts on your neighbors. When planning for new facilities, and especially manure storage lagoons, site them as far from neighbors as possible, and with consideration for prevailing winds. Odors are far less noticeable at 800 feet than they are at 200 or even 400 feet. If adjacent properties go up for sale, consider buying them as a buffer against future encroachment by development.